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REMARKS

Claims 63 and 76 are amended. Claims 38-101 are in the application for consideration.

The undersigned appreciates the Examiner's indicated allowance of claims 38-51, 71, 74, and 77-84, as well as the indicated allowability of claims 53, 58, 65, 66, 69, 85, 90, 96, 97, and 100. The objected to claims have not been rewritten in independent form as it is asserted below that the claims from which such depend are allowable.

The undersigned also appreciates the Examiner's inclusion of Fig. 2F of U.S. Patent No. 6,720,027 to Yang et al. regarding his interpretation of the various depicted pulses allegedly pertinent to Applicant's rejected claims. Applicant provides the following argument without any admission that the cited '027 Yang et al. patent is prior art to Applicant's application.

Applicant's independent claims 52 and 75 stand rejected as being anticipated by the '027 Yang et al. reference. Applicant disagrees and requests reconsideration. Each of independent claims 52 and 75 recites that the second precursor gas flowing comprises a plurality of time spaced second precursor gas pulses (i.e., multiple P2's). Each of independent claims 52 and 75 also recites, and thereby requires, to form the second monolayer on the first monolayer. Accordingly, the flowing of the second precursor gas requires at least two time spaced P2's, and the second monolayer which is formed must be formed on the first monolayer. Applicant at p.11 defines "on" as requiring at least some direct physical contact with the first monolayer. Accordingly, the first and monolayer at

some portion must directly abut one another in direct physical contact. Independent claims 52 and 75 clearly require such, and Yang et al. does not disclose this facet of Applicant's independent claims 52 and 75.

Specifically, the Examiner interprets in Fig. 2F of Yang et al. the two adjacent of the second precursor gas pulses 423 as constituting Applicant's plurality of time spaced P2's. However, the Examiner will note that a first precursor pulse 413 (i.e., a P1) occurs between the Examiner-depicted two P2 pulses 423. Accordingly, such second P1 pulse 413 forms another monolayer onto the second monolayer formed by the flowing of the first P2 pulse. Thereby, the second P2 pulse 423 is not forming a second monolayer on the first monolayer as another intervening monolayer has been formed over the first monolayer the result of the second P1 pulse 413.

Applicant acknowledges that its independent claims 52 and 75 do not preclude some other gas being fed to the chamber between the two adjacent P2, as evidenced by claim 54. By way of example only, such a gas might be an inert pulse or some other gas which is unreactive to cover the first monolayer on the substrate. However, any flow of a gas to the chamber between the two adjacent P2 gas pulses cannot be completely covering of the first monolayer, as to do so would preclude the second monolayer formation the result of flowing a plurality of time spaced P2 gas pulses from forming on the first monolayer as is explicitly required by claims 52 and 75.

Applicant's interpretation is further inherently supported by Yang et al. at col.8, ln.53 - col.9, ln.15. There, Yang et al. refers to "one cycle 401" (col.8,

In.58), and that "the cycle 401 may be repeated" (col.9, Ins.11,12). Accordingly, the Examiner's interpretation of two depicted P2's are occurring over two different cycles 401.

Regardless, Yang et al. does not disclose forming its second monolayer on the first monolayer the result of flowing a plurality of time spaced second precursor gas pulses due to the intervening second P1 pulse 413 in between the two P2 pulses 423. Accordingly, Yang et al. does not include all of the limitations of Applicant's independent claims 52 and 75, and the anticipation rejections thereof should be withdrawn. Action to that end is requested.

Independent claims 63 and 76 also stand rejected as being anticipated by Yang et al. Applicant disagrees and requests reconsideration. With respect to claim 63, the Examiner refers to the discussion regarding claim 52. However, each of claim 63 and 76 recites that the second precursor gas flowing comprises at least two time abutting P2 gas pulses which are characterized by different flow rates of the second precursor. The Examiner then expressly asserts that Yang in Fig. 2F discloses such time abutting second precursor gas pulses of different flow rates with the second precursor as Applicant claims. However, each of the depicted P2 second precursor pulses 423 in Yang et al. is clearly depicted in Fig. 2F as being spaced from one another, and of the same constant flow rate. Further, none of the individual Yang et al. P2 pulses could be considered as Applicant's at least two time abutting second precursor gas pulses characterized by different flow rates as each of such flow rates is depicted as being constant during the each of the respective pulses.

The Examiner provides the parenthetical "(relative to the flow rates of the first precursor)" apparently in support of the anticipation rejection of what Fig. 2F allegedly discloses. However, the undersigned in no way understands to what the Examiner is referring as Applicant's independent claims 63 and 76 are referring to different flow rates of the second precursor independent of whatever might occur during flow of the first precursor. Nevertheless, claims 63 and 76 are amended to recite that the second precursor gas flowing comprises "at least two time abutting second precursor gas pulses which are characterized by different second precursor flow rates". Such amendments do not in any way go to patentability of such claims, as the limitations of claims 63 and 76 before and after the amendment are identical and no inherent clarification in a §112 or other sense occurs by such amendments. Under no conceivable stretch of the imagination does Yang et al. disclose at least two time abutting second precursor gas pulses which are characterized by different second precursor flow rates. Accordingly, the anticipation rejection thereover should be withdrawn, and action to that end is requested.

Applicant's rejected dependent claim should be allowed as depending from allowable base claims, and for their own recited features which are neither shown nor suggested in the cited art. Action to that end is requested.

Respectfully submitted,

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By: 

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